3:5 Reptiles & Amphibians

Yellowstone is home for a small variety of reptiles and amphibians. Cool and dry conditions are likely responsible for their relatively low numbers in Yellowstone.

In 1991 park staff began cooperating with researchers from Idaho State University to sample additional park habitats for reptiles and amphibians. This led to establishment of long-term monitoring sites in the park. The relatively undisturbed nature of the park and the baseline data may prove useful in testing hypotheses concerning the apparent declines of several species of toads and frogs in the western United States. Reptile and amphibian population declines may be caused by such factors as drought, pollution, disease, and/or predation.

Number in Yellowstone

- Cool,dry conditions limit Yellowstone's reptiles to six species and amphibians to four species.
- Population numbers for these species are not known.
- **Reptiles:** prairie rattlesnake, bull snake, common garter snake, wandering garter snake, rubber boa, sagebrush lizard
- **Amphibians:** boreal toad, chorus frog, spotted frog, tiger salamander

Status

- The spotted frog may be declining in the West.
- Some researchers suspect that there are more amphibians in Yellowstone than are currently known, but this has not been documented yet.

Current Research

In 1991, NPS staff began cooperating with Idaho State University to sample park habitats for reptiles and amphibians.

Although no Yellowstone reptile or amphibian species are currently listed as threatened or endangered, several—including the spotted frog—are thought to be declining in the West.

Species descriptions follow.

The map at left shows six amphibian breeding sites monitored since 1991; each site has two to four species.

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The chart below shows the number of confirmed breeding sites found during surveys for reptiles and amphibians along 95 miles of park roads.

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Both reptiles and amphibians are ectothermic ("cold-blooded"),meaning they derive body heat from outside sources rather than generate it internally. Reptiles have scaly, dry skin. Some lay eggs; others bear live young. Amphibians have thin, moist glandular skin permeable to water and gases. The young must pass through a larval stage before changing into adults. Amphibious means "double life" and reflects the fact that salamanders,toads, and frogs live in water as larvae and on land for much of the rest of their lives.

Resources for more information are listed at the end of Chapter 3, pages 82–84.

VALLEY GARTER SNAKE

Identification

- Subspecies of the common garter snake
- Medium sized snake reaching total length of up to 34 inches
- Nearly black background color with three bright longitudinal stripes running the length of the body, underside is pale yellow or bluish gray
- Most distinguishing characteristics of this subspecies in our region are the irregular red spots along the sides

Habitat

- Thought to be common in the past, now in decline for no apparent reason
- Closely associated with permanent surface water
- In Yellowstone observed only in the Falls River drainage in the Bechler region and three miles south of the south entrance along the Snake River

Behavior

- Generally active during the day
- In the Yellowstone area it eats mostly toads, chorus frogs, fish remains, and earthworms; can eat relatively poisonous species
- Predators include fish, birds, and carnivorous mammals

WANDERING GARTER SNAKE

Identification

- Most common reptile in the park
- 6 to 30 inches in length
- Brown, brownish green, or gray with three light stripes—one running the length of the back and a stripe on each side

Habitat

- Usually found near water in all areas of the park
- Eats small rodents, fish, frogs, tadpoles, salamanders, earthworms, slugs, snails, and leeches

Behavior

- May discharge musk from glands at the base of the tail when threatened
- Gives birth to as many as 20 live young in late summer or fall

BULLSNAKE

Identification

- A subspecies of the gopher snake, is Yellowstone's largest reptile, ranging from 50 to 72 inches long
- Yellowish with a series of black, brown, or reddish-brown blotches down the back; the darkest, most contrasting colors are near the head and tail; blotches are shaped as rings around the tail
- Head resembles a turtle's in shape, with a protruding scale at the tip of the snout and a dark band extending from the top of the head through the eye to the lower jaw

Habitat

- In Yellowstone, found at lower elevations; drier, warmer climates; and open areas such as near Mammoth

Behavior

- Lives in burrows and eats small rodents—behavior that gave the gopher snake its name
- Often mistaken for a rattlesnake because of its appearance and its defensive behavior: when disturbed, it will coil up, hiss loudly, and vibrate its tail against the ground, producing a rattling sound

RUBBER BOA

Identification

- Infrequently encountered in Yellowstone, perhaps due to its nocturnal and burrowing habits
- One of two species of snakes in the United States related to tropical boa constrictors and pythons
- Maximum of two feet in length
- Back is uniformly gray or greenish-brown, belly is lemon yellow; scales are small and smooth, making it almost velvety to the touch

Habitat and Behavior

- Eats rodents
- May spend great deal of time partially buried under leaves and soil , and in rodent burrows.
- Usually found in rocky areas near streams or rivers, with shrubs or trees nearby
- Recent sightings have occurred in the Bechler region and Gibbon Meadows

PRAIRIE RATTLESNAKE

Identification

- More than 48 inches in length
- Greenish gray to olive green, greenish brown, light brown, or yellowish with dark brown splotches down its back that are bordered in white

Habitat

- Only dangerously venomous snake in the park
- Lives in the lower Yellowstone River areas of the park, including Reese Creek, Stephens Creek, and Rattlesnake Butte, where the habitat is drier and warmer than elsewhere in the park

Behavior

- Usually defensive rather than aggressive
- Only two snake bites are known during the history of the park

SAGEBRUSH LIZARD

Identification

- Only lizard in Yellowstone
- Maximum size of five inches from snout to tip of the tail; males have longer tails and may grow slightly larger than females
- Gray or light brown with darker brown stripes on the back set inside lighter stripes on the sides, running the length of the body; stripes not always prominent and may appear as a pattern of checks down the back; underside usually cream or white in color
- Males have bright blue patches on the belly and on each side, with blue mottling on the throat

Habitat

- Usually found below 6,000 feet but in Yellowstone lives up to 8,300 feet
- Populations living in thermally influenced areas are possibly isolated from other populations
- Most common along the lower portions of the Yellowstone River near Gardiner, Montana and upstream to the mouth of Bear Creek; also occurs in Norris Geyser Basin, Shoshone and Heart Lake geyser basins, and other thermal areas

Behavior

- Come out of hibernation about mid May and active through mid September
- Diurnal, generally observed during warm, sunny weather in dry rocky habitats
- During the breeding season males can be seen doing push-ups on elevated perches displaying their bright blue side patches to warn off other males
- Feed on various insects and arthropods
- Preyed upon by bull snakes, wandering garter snakes, rattlesnakes and some bird species
- May shed tail when threatened or grabbed

BLOTCHED TIGER SALAMANDER

Identification

- The only salamander in Yellowstone
- Adults range up to about 9 inches, including the tail
- Head is broad, with a wide mouth
- Color ranges from light olive or brown to nearly black, often with yellows blotches or streaks on back and sides; belly is dull lemon yellow with irregular black spots
- Larvae, which are aquatic, have a uniform color and large feathery gills behind the head; they can reach sizes comparable to adults but are considerably heavier

Habitat

- Breeds in ponds and fishless lakes
- Widespread in Yellowstone in a great variety of habitats, with sizable populations in the Lamar Valley

Behavior

- Adult salamanders come out from hibernation in late April to June, depending on elevation, and migrate to breeding ponds where they lay their eggs
- Mass migrations of salamanders crossing roads are sometimes encountered, particularly during or after rain
- After migration, return to their moist homes under rocks and logs and in burrows
- Feed on adult insects, insect nymphs and larvae, small aquatic invertebrates, frogs, tadpoles, and even small vertebrates
- Preyed upon by a wide variety of animals, including mammals, fish, snakes, and birds such as sandhill cranes and great blue herons

BOREAL TOAD

Identification

- Yellowstone's only toad
- Adults range up to about 4 inches, juveniles just metamorphosed from tadpoles are only one inch long
- Stocky body and blunt nose
- Brown, gray, or olive green with irregular black spots, lots of "warts," and usually a white or cream colored stripe down the back
- Tadpoles are usually black and often congregate in large groups

Habitat

- Once common throughout the park, now appears to be much rarer than spotted frogs and chorus frogs; scientists fear this species has experienced a decline in the Greater Yellowstone Ecosystem
- Adults can range far from wetlands because of their ability to soak up water from tiny puddles or moist areas
- Lay eggs in shallow, sun-warmed water, such as ponds, lake edges, slow streams, and river backwaters

Behavior

- Tadpoles eat aquatic plants; adults eat insects, especially ants and beetles, worms and other small invertebrates
- Sometimes active at night
- Defends itself against predators by secreting an irritating fluid from numerous glands on its back and behind the eyes
- Eaten by snakes, mammals, ravens, and large wading birds

Toad or Frog?
Toads can easily be distinguished from frogs by their warty bodies, thick waists, and prominent glands behind their eyes.

COLUMBIA SPOTTED FROG

Identification

- Abundant and best known amphibian in Yellowstone
- Maximum length is 3.2 inches, newly metamorphosed juveniles less than one inch long
- Upper surface of the adult is gray-brown to dark olive or even green, with irregular black spots; skin is bumpy; underside is white splashed with brilliant orange on the thighs and arms on many but not all individuals
- Tadpoles have long tails and may grow to 3 inches long

Habitat

- Found all summer along or in rivers, streams, smaller lakes, marshes, ponds, and rain pools
- Lay eggs in stagnant or quiet water, in globular masses surrounded by jelly

Behavior

- Breeds in May or early June, depending on temperatures
- Tadpoles mature and change into adults between July and September
- Tadpoles eat aquatic plants, adults mostly eat insects but are highly opportunistic in their food habits (like many other adult amphibians)

BOREAL CHORUS FROG

Identification

- Adults reach 1 to 1-1/2 inches in length, and females are usually larger than males; newly metamorphosed froglets are less than one inch long
- Brown, olive, tan, or green (sometimes bi-colored) with a prominent black stripe on each side from the nostril through the eye and down the sides to the groin; three dark stripes down the back, often incomplete or broken into blotches

Habitat

- Common, but seldom seen due to its small size and secretive habits
- Live in moist meadows and forests near wetlands
- Lays eggs in loose irregular clusters attached to submerged vegetation in quiet water

Behavior

- Breeds in shallow temporary pools or ponds during the late spring
- Calls are very conspicuous, resembles the sound of a thumb running along the teeth of a comb
- Males call and respond, producing a loud and continuous chorus at good breeding sites, from April to early July, depending on elevation and weather
- Usually call in late afternoon and evening
- Tadpoles eat aquatic plants; adults mostly eat insects
- Eaten by fish, predacious aquatic insect larvae, other amphibians, garter snakes, mammals, and birds

In the winter in Yellowstone, some amphibians go into water that won't freeze (spotted frogs), others enter underground burrows (salamanders and toads), and others (boreal chorus frog) actually tolerate freezing and go into a heart-stopped dormancy for the winter in leaf litter or under woody debris.

Resources for more information are listed at the end of Chapter 3, pages 82–84.